

Amendments to the Specification

Please replace paragraph [0003] with the following amended paragraph:

[0003] Polymeric positive temperature coefficient (PTC) circuit protection devices (“PPTCs”) are typically produced from extruded conductive polymer sheet that has been laminated on both sides with a conductive metallic foil. Useful methods of producing a plurality of laminar surface mount polymeric PTC devices which have at least two electrical connections on one surface have been described in U.S. Patents Nos. 5,852,397 (Chan et al.), 6,211,771 (Zhang et al.) and 6,292,088 (Zhang et al.), and U.S. Patent Application No. 09/395,869 (Hetherton et al., filed September 14, 1999), now U.S. Patent No. 6,640,420, issued November 4, 2003, the disclosures of which are incorporated herein by reference. These methods include the patterning of the laminates using printed circuit board technology to form a panel, and then isolating many single devices from the panel (i.e. singulation), for example by sawing, snapping or shearing.

Please replace paragraph [0007] with the following amended paragraph:

[0007] It has been previously unknown that an additional high irradiation dose (for example, greater than 20 Mrads, preferably 50 to 100 Mrads) applied to finished panels (prior to singulation) or to finished laminar surface mount devices (as described for example in U.S. Patent No. 5,852,397 or U.S. Patent Application No. 09/395,869, now U.S. Patent No. 6,640,420) can be used to finely tune their R(T) curves to provide improved overtemperature protection devices. The additional beam dose can improve performance by producing increased resistance at a given temperature (e.g., at its switching temperature) or can lower the switching temperature in a controlled fashion while maintaining or increasing the resistance at or above the switching temperature without changing the formulation of the conductive polymer. For example, the switching temperature can be lowered in 3 to 4 degree Celsius steps using the method described herein. Preferably, the laminates have been crosslinked (preferably using irradiation) prior to being patterned to form panels and therefore prior to the formation of laminar surface mount devices, although such crosslinking of the laminate is not necessary for some applications. Preferably, the additional beam dose is preceded by a heat treatment which will cause the polymeric composite material to be heated above its melt temperature. The method described herein can allow customized tailoring of the R(T) shape as required such that devices may be easily designed into various overtemperature protection applications, often without varying the PTC material or construction. For example, the same batch of finished laminar surface mount devices may be further processed according to the method described herein to produce several different surface mountable overtemperature protection devices.

Please replace paragraph [0014] with the following amended paragraph:

[0014] Circuit protection devices and PTC conductive polymer compositions for use in them disclosed for example in U.S. Patents Nos. 4,237,441 (van Konynenburg et al.), 4,304,987 (van Konynenburg), 4,514,620 (Cheng et al.), 4,534,889 (van Konynenburg et al.), 4,545,926 (Fouts et al.), 4,724,417 (Au et al.), 4,774,024 (Deep et al.), 4,935,156 (van Konynenburg et al.), 5,049,850 (Evans et al.), 5,378,407 (Chandler et al.), 5,451,919 (Chu et al.), 5,582,770 (Chu et al.), 5,747,147 (Wartenberg et al.), and 5,801,612 (Chandler et al.), and 6,358,438 (Isozaki et al.). The disclosure of each of these patents is incorporated herein by reference.